CLAIMS

What is claimed is:

1. A monolayer film comprising:

a polymer blend of a first component selected from the group consisting of an ethylene containing polymer, the first component present in an amount by weight of the film from about 60% to about 1%, the first component having a first melting point temperature determined by DSC, a second component selected from the group consisting of propylene containing polymers and methyl pentene containing polymers, the second component being present in an amount by weight of the film from about 99% to about 40%, the second component having a second melting point temperature determined by DSC; and the film being capable of withstanding steam sterilization at a temperature from about 100°C to about 130°C.

2. The film of claim 1, wherein the second melting point temperature is higher than the first melting point temperature.

3. The film of claim 1 wherein the ethylene containing polymer is obtained using a catalyst selected from the group consisting of: Ziegler-Natta and single-site.

4. The film of claim 1, wherein the ethylene containing polymer is selected from the group consisting of: ethylene homopolymers, and ethylene copolymers.

5. The film of claim 1, wherein the propylene containing polymer is selected from the group of propylene homopolymers and propylene copolymers.

6. The film of claim 5, wherein the propylene containing polymer is obtained using a catalyst selected from the group consisting of: Ziegler-Natta and single-site.

7. The film of claim 1, wherein the propylene containing polymer is a high melt strength polymer.

8. The film of claim 7, wherein the high melt strength propylene containing polymer is selected from the propylene containing propylene made from eletron beam process and reactor made process.

9. The film of claim 1 further comprising an oxygen scavenger.

10. The film of claim 9, wherein the oxygen scavenger is an oxidizable polydiene.

11. The film of claim 9, wherein the oxygen scavenger is an oxidizable polyether.

12. The film of claim 1, wherein the film is prepared by a process selected from the group consisting of extrusion, canlendering, blown film extrusion and blown molding.

13. The film of claim 1, is capable of being fabricated into a liquid filled container wherein the container has sufficient impact strength to resist rupturing when dropped from 8 feet.

14. The film of claim 1, is capable of being fabricated into a liquid filled container wherein the container is capable of being terminally sterilized by exposure to steam at 121°C for one hour.

15. The film of claim 1 is capable of being sterilized by steam sterilization exposure to radiation and exposure to ethylene oxide.

16. The film of claim 1 is capable of forming a peel seal to form a multiple chambered container.

17. The film of claim 16 is further capable of forming a permanent seal to form a multiple chambered container

18. A multilayer film comprising:

a barrier layer;

a seal layer comprising a blend of: (i) an ethylene and α-olefin copolymer having a density of less than about 0.915 g/cc, and in an amount of from about 60% to about 1% by weight of the blend, and (ii) a propylene containing polymer in an amount by weight of the blend from about 99% to about 40 %; and

the film can be heat sealed into a container having seals wherein the seals remain intact when the container is retorted at 121°C for sixty minutes, and wherein the container does not rupture when dropped from 8 feet. (not to specify the weight)

19. The film of claim 18, wherein the barrier layer contains a barrier material selected from the group consisting of polyamides and ethylene vinyl alcohol copolymers.

20. The film of claim 18, wherein the propylene containing polymer is selected from the group of propylene homopolymers and propylene copolymers.

21. The film of claim 20, wherein the propylene containing polymer is obtained using a catalyst selected from the group consisting of: Ziegler-Natta and single-site.

22. The film of claim 20, wherein the propylene contain polymer is a high melt strength polymer.

23. The film of claim 18, wherein the propylene containing polymer is a blend of a first propylene containing polymer and a second propylene containing polymer.

24. The film of claim 18, wherein the first propylene containing polymer has a first melt flow rate and the second propylene containing polymer has a second melt flow rate wherein the first melt flow rate is higher than the first melt flow rate.

25. The film of claim 24, wherein the first melt flow rate is about 3 times greater than the second melt flow rate.

26. The film of claim 24, wherein the first melt flow rate is about 5 times greater than the second melt flow rate.

27. The film of claim 23, wherein the first propylene containing polymer has a first melting point temperature and the second propylene containing polymer has a second melting point temperature wherein the first melting point temperature is higher than the second melting point temperature by at least about 5°C.

28. The film of claim 23, wherein the first propylene containing polymer has a first melting point temperature and the second propylene containing polymer has a second melting point temperature wherein the first melting point temperature is higher than the second melting point temperature by at least about 10°C.

29. The film of claim 1, wherein the seal layer blend further comprises an oxygen scavenger.

30. The film of claim 19, wherein the barrier layer blend further comprises an oxygen scavenger.

31. The film of claim 29, wherein the oxygen scavenger is an oxidizable polydiene.

32. The film of claim 29, wherein the oxygen scavenger is an oxidizable polyether.

33. The film of claim 18, wherein the barrier layer further comprises a metal fatty acid salt.

34. The film of claim 18, wherein the α-olefin has from 3 to 17 carbons.

35. The film of claim 18, wherein the α-olefin has from 4 to 8 carbons.

36. The film of claim 18, wherein the ethylene and α-olefin copolymer is obtained using a single site catalyst.

37. The film of claim 18, wherein the film further comprises a tie layer adhering the barrier layer to the inner layer.

38. The film of claim 18, is capable of being terminally sterilized by other sterilization modes in radiation and ethylene oxide.

39. The film of claim 18, is capable of forming a peel seal to form a multiple chambered container.

40. The film of claim 18, is capable of forming a permanent seal to form a multiple chambered container

41. A container comprising:

a wall defining a chamber, the wall having

a barrier layer;

a seal layer of a polymer blend of a first component selected from the group consisting of an ethylene containing polymer, the first component present in an amount by weight of the film from about 60% to about 1%, the first component having a first melting point temperature determined by DSC, a second component selected from the group consisting of propylene containing polymers and methyl pentene containing polymers, the second component being present in an amount by weight of the film from about 99% to about

40%, the second component having a second melting point temperature determined by DSC; and the container being capable of withstanding steam sterilization at a temperature at 121°C for sixty minutes and has an impact strength sufficient to withstand a drop from a height of 8 feet without rupturing

42. The container of claim 41, wherein the propylene containing polymer is selected from the group of propylene homopolymers and propylene copolymers.

43. The container of claim 42, wherein the propylene containing polymer is obtained using a catalyst selected from the group consisting of: Ziegler-Natta and single-site.

44. The container of claim 41, wherein the propylene contain polymer is a high melt strength polymer.

45. The container of claim 41, wherein the propylene containing polymer is a blend of a first propylene containing polymer and a second propylene containing polymer.

46. The container of claim 45, wherein the first propylene containing polymer has a first melt flow rate and the second propylene containing polymer has a second melt flow rate wherein the first melt flow rate is higher than the first melt flow rate.

47. The container of claim 45, wherein the first melt flow rate is about 3 times greater than the second melt flow rate.

48. The container of claim 45, wherein the first melt flow rate is about 5 times greater than the second melt flow rate.

49. The container of claim 45, wherein the first propylene containing polymer has a first melting point temperature and the second propylene containing polymer has a second melting point temperature wherein the first melting point temperature is higher than the second melting point temperature by at least about 5°C.

50. The container of claim 45, wherein the first propylene containing polymer has a first melting point temperature and the second propylene containing polymer has a second melting point temperature wherein the first melting point temperature is higher than the second melting point temperature by at least about 10°C.

51. The container of claim 41, wherein the seal layer blend further comprises an oxygen scavenger.

52. The container of claim 41, wherein the barrier layer blend further comprises an oxygen scavenger.

53. The container of claim 52, wherein the oxygen scavenger is an oxidizable polydiene.

54. The container of claim 52, wherein the oxygen scavenger is an oxidizable polyether.

55. The container of claim 41, wherein the barrier layer further comprises a metal fatty acid salt.

56. The container of claim 41, wherein the ethylene-containing polymer is an α-olefin.

57. The container of claim 56, wherein the α-olefin has from 3 to 17 carbons.

58. The container of claim 41, wherein the α-olefin has from 4 to 8 carbons.

59. The container of claim 41, wherein the ethylene and α-olefin copolymer is obtained using a single site catalyst.

60. The container of claim 41, wherein the container further comprises a tie layer adhering the barrier layer to the inner layer.

61. The container of claim 41, wherein the barrier layer is selected from ethylene viny alcohol and polyamide. .

62. The container of claim 41, wherein the container has peel seal to form multiple chambers.

63. The container of claim 41, wherein the container stores fluid at –20C and microwave oven heating at 100C.

64. The container of claim 41, wherein the container stores fluid at –20C and autoclave at 121C.

65. The container of claim 41, wherein the container is made from an aseptic tube film manufacturing method by using 0.22 μm air filter and filtered water quench during blown film process for empty bags suitable for aseptic filling and high end fluid bags for hot fluid filling.

66. The container of claim 41, wherein the container surface is non-sticky after the heating at 121C.